

CLAIMS

1. An elevator system comprising:
  - a car (28) having a plurality of opposed electromagnets (26); and
  - 5 two spaced car follower portions (40) each having an electromagnet (24) facing a corresponding one of said electromagnets on said car, and said car follower portions each being provided with guide structure (42) for moving along a guide rail (25) in an elevator hoistway, said electromagnets on said car and said car follower portions interacting to provide a repulsive force tending to force said 10 elevator car to be centered between said car follower portions.
2. An elevator system as set forth in Claim 1, wherein said car follower portions are interconnected (32) to move together as a single car follower.
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  3. An elevator system as set forth in Claim 2, wherein said car is free to move relative to said car follower in a horizontal plane but constrained to move with said car follower in a vertical direction.
4. An elevator system as set forth in Claim 3, wherein said car follower is movable relative to a guide member (38) which moves with said car, said car follower including crossing members (32) extending through a slot (44) in said guide member, said guide member ensuring that said car is constrained to move with said car follower in said vertical direction.
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  5. An elevator system as set forth in Claim 4, wherein said car follower includes generally vertical extending frame members (36) which are connected to said crossing members (32) through a universal joint (34).
6. An elevator system as set forth in Claim 1, wherein there are a plurality of electromagnets associated with each of said car follower portions.
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7. An elevator system as set forth in Claim 1, wherein a control system (30) controls the field strength of said electromagnets to in turn control a repulsive force from said electromagnets.

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8. An elevator comprising:  
a car (28) to be movable through a vertical path of travel; and  
a car follower (22) to be movable along two guide rails (25), said car follower including magnets (24) associated with each guide rail, said magnets on said car follower interconnected (32) to move together in a horizontal plane and relative to said car, and said car including magnets (26) positioned to be opposed to said magnets on said car follower, said car being free to move relative to said car follower in a horizontal plane, but generally constrained to move with said car follower along said vertical path of travel, and there being a repulsive magnetic force between said magnets on said car follower and said magnets on said car.

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9. An elevator as set forth in Claim 8, wherein said car follower is movable relative to a guide member (38) which moves with said car, said car follower including crossing members (32) extending through a slot (44) in said guide member, and said crossing members being received in said slot ensuring that said car is constrained to move with said car follower in said vertical direction.

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10. An elevator as set forth in Claim 9, wherein said car follower includes generally vertically extending frame members (36) which are connected to said crossing members (32) through a universal joint (34).

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11. An elevator as set forth in Claim 8, wherein said magnets are electromagnets and including a control (30) that selectively varies the repulsive magnetic force between at least two opposing magnets to selectively control a position of the car relative to the car follower.